

Amendments to the Drawings

A new drawing sheet containing new FIG. 3A is attached following page 16 of this document. No new matter has been added.

Remarks/Arguments

Claims 1-41 are pending in the application. Claims 1-41 are rejected. Claims 1-12, 19-20, 22-28, 30, and 32-39 are amended. Claims 13-18, 21, 29, and 31 have been cancelled.

New claims 42-46 have been added. No new matter has been added.

Drawings

The Examiner objects to the drawings for failing to disclose offset spherical and aspherical lens designs.

The existing Fig. 3 discloses a spherical lens design with the center axis of the lens over the LED. Applicant has submitted a new drawing Fig. 3A depicting a spherical lens design indicating the center axis of the lens offset from the center axis of the LED. The specification has been amended to make a proper reference to that drawing. No new matter has been added. Support for the Figure showing an offset spherical shape is found in the specification in published paragraph [0023].

Claim rejections under 35 USC §102

1. Claims 1-9 are not anticipated by Mize because Mize does not describe a monolithic lens array, with each lens distributed around an LED light source.

The claims 1-9 are rejected under 35 USC §102(b) as being anticipated by Mize, US patent no. 6,328,456 (hereinafter referred to as "Mize").

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, (Fed. Cir. 1987).

The present application is generally focused on monolithic lens array structure with specific lens configurations. In contrast, Mize discloses a mechanism for improving the

illumination of a single, packaged LED. (See Mize, Figs. 1-9.) For example, Fig. 5 is a modified LED package with a parabolic attachment, and Figs. 6-9 are close-up views of single modified LED. Mize teaches the use of modifying each individual LED package to modify the emitted light. Mize's modified LED packages are intended to serve as "plug replacement" for a commonly found incandescent light in a flashlight and operate to create a greater range of light scattering. (Mize, col. 5, lns 46-54).

In contrast the, claimed lenses in the present application are intended to do the opposite, namely achieve more collimated emission of light. Independent claim 1 has been amended to claim a monolithic lens array (E.g., Application, ¶ [0009]), with individual lenses distributed around each of the individual LEDs, and the individual faceted compound shapes that achieve collimation, not scattering. (E.g., Application, ¶ [0012].)

Although Mize does discuss in passing the use of multiple LEDs in an array, it does not teach or suggest a monolithic lens system to cover an array of LEDs for collimation of light. (Mize, col. 7, lns 38-54). Because Applicant's claims 1-9 relate to multiple lenses in a monolithic structure, wherein each lens has a compound shape, the lens modification of Mize for discrete, individually packaged LEDs does not anticipate each of every element of the lens array, as recited in the claims.

Since independent claim 1 distinguishes over Mize, dependent claims 2-8 also patentably distinguish over Mize. Dependent claims 2-9 have been amended to conform terminology to amended claim 1, and no new matter has been added.

New Claims 42-46

Applicant has amended the Application to include new independent claim 42 and new dependent claims 43-46. These amendments reflect the disclosure in the Application that states "each curved surface 40 is centered about a radius R extending from a center point 44. Each radius R extends from center point 44 that lies directly above an imaginary point source on each

side of the LED 30". (Application, ¶ [0023].) Furthermore, the Applicant discloses the configuration of a lens in the array by defining a radius "R" as extending from each side 38 of the LED. This creates a "split lens" that is joined by a flat surface. (Application, ¶ [0023].)

This lens definition is distinguishable from Mize and the other cited references. Mize assumes that the point source light is in the same plane as the base of the spherical surface. (See Mize, Fig. 5.) The Applicant's lens configuration is based on a center point 44 that is clearly offset vertically (see Application, Fig. 3, reference character 44) from the LED. Therefore claims 42-46 patentably distinguish over Mize, as well as the other cited art. Claims 19 20, and 22-28 now depend from claim 42 and are patentable for the same reasons.

Applicant respectfully requests allowance of claims 1-9, 19, 20, 22-28, and 42-46 in view of the foregoing distinctions.

2. Claims 9-33, 35, 37 and 39-41 are not anticipated by Parkyn because Parkyn discloses a mathematical lens operation for optimizing a single lens, but not an actual lens array.

Claims 9-33, 35, 37, and 39-41 are rejected under 35 USC §102(b) as being anticipated by Parkyn, US patent no. 6,273,596.

Claims 9-12 depend from claim 1, which has been amended to recite the limitation of a monolithic lens array, with each lens is distributed around an LED light source. Further, figures 5 and 16 of Parkyn fail to disclose a monolithic lens array wherein each lens for an LED light source is configured as a symmetrically circular shape (claim 9) a square tile pattern (claims 10 and 11), and in micro-pyramids (claim 12). Therefore claims 9-12 are not anticipated by Parkyn.

Dependent claim 13 has been cancelled. The array structure is now an element of independent claim 1, so the dependent claim is duplicative. Claims 14-18 are cancelled without prejudice to pursue them in a possible continuing application. Claims 19, 20, and 22-28 are amended without prejudice to pursue similar claims of additional scope in a possible continuing application.

Independent claim 30 has been amended similar to new claim 42, as is patentably distinct over the cited art for at least the same reasons. The amendment is without prejudice to pursue similar claims of additional scope in a continuing application. Accordingly, the rejections of claim 30 and dependent claims 32-41 are moot.

Since claims 9-29 and 30-38 (method of manufacturing) are not anticipated by Parkyn, Applicant respectfully requests that the rejections be withdrawn and these claims be allowed.

Rejection of Claims 34, 36, and 38 under 35 USC §103

Claims 34, 36, 38 are rejected under 35 USC §103(a) as being unpatentable over Parkyn and further in view of Mize.

If Mize and Parkyn may not be the basis for anticipation under 35 USC § 102(a) as argued above, then there can be no basis for an obviousness rejection. Applicant respectfully requests that the rejection of the amended claims 34, 36, and 38 be withdrawn, and the claims allowed.

Nothing herein should be deemed as a disclaimer or surrender of any rights, an acquiescence in any rejection, or a waiver of any arguments that might have been raised but were not raised herein or otherwise in the prosecution of this application. Applicant reserves all rights and subject matter with respect to claims being or to be pursued in this or a related application.

CONCLUSION

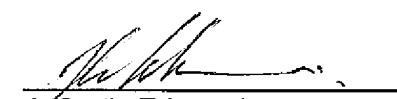
Applicant submits that in view of the foregoing remarks and/or amendments, the application is in condition for allowance, and favorable action is respectfully requested.

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Credit Card cannot be processed, the Commissioner is hereby authorized to charge any fees, additional fees, or underpayments, or to credit any overpayments, to Deposit Account No. 50-1001.

Respectfully submitted,

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